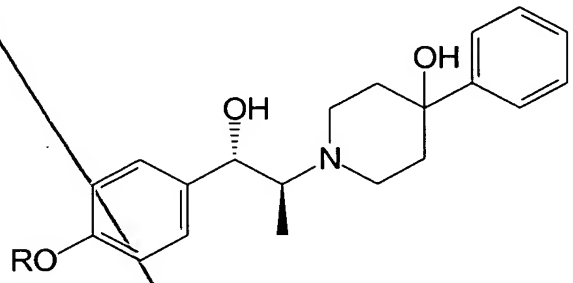
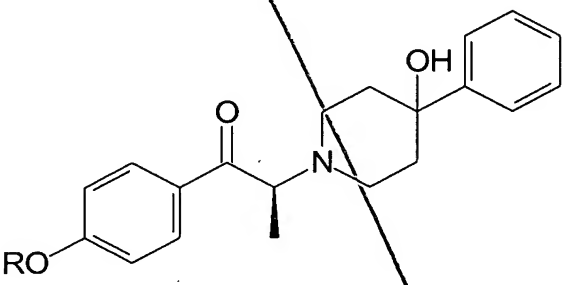
CLAIMS:

1. A process for the preparation of a nonracemic diastereomer selected from 1-(4-hydroxy-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanol compounds of the structural formula I and stereoisomers thereof,



I

wherein R is selected from hydrogen and hydroxyl protecting groups, comprising hydrogenating a corresponding nonracemic ketone selected from 1-(4-hydroxy-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanone compounds of the structural formula II and enantiomers thereof,

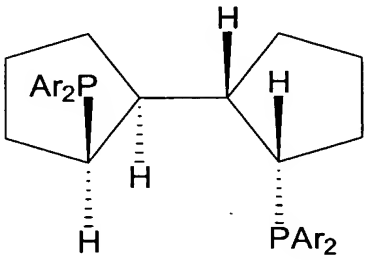


II

in the presence of a catalyst system comprising ruthenium, a nonracemic diphosphine ligand, a bidentate amine ligand selected from amino-thioethers and achiral diamines, and a base.

2. The process of claim 1 wherein the nonracemic diphosphine ligand comprises a 2,2'-bis(diorganophosphino)-1,1'-bis(cyclic) structure.

3. The process of claim 2 wherein the nonracemic diphosphine ligand is selected from enantiomers of diphosphine ligands having the structural formula



wherein Ar is an aryl group.

4. The process of claim 3 wherein Ar is phenyl.

5. The process of claim 1 wherein the bidentate amine ligand is an amino-thioether.

6. The process of claim 5 wherein the amino-thioether is a 2-(alkylthio)aniline.

7. The process of claim 6 wherein the 2-(alkylthio)aniline is selected from 2-(methylthio)aniline and 2-(ethylthio)aniline.

8. The process of claim 1 wherein the bidentate amine ligand is an achiral diamine.

9. The process of claim 8 wherein the achiral diamine comprises no chiral carbon centers.

10. The process of claim 8 wherein the achiral diamine is a 1,2-phenylene-diamine.

11. The process of claim 1 wherein the base is selected from basic inorganic and organic salts, alkylguanidines, aminophosphazenes, and proazaphosphatranes.

12. The process of claim 11 wherein the base is selected from alkylguanidines, aminophosphazenes, and proazaphosphatranes.

13. The process of claim 12 wherein the base is an alkylguanidine.

14. The process of claim 13 wherein the base is a pentaalkylguanidine.

15. The process of claim 1 wherein the hydroxyl protecting group is benzyl.

16. The process of claim 15 wherein the diastereomer is a *syn*-diastereomer.

17. The process of claim 16 wherein the *syn*-diastereomer is the (1*S*,2*S*) diastereomer.

18. The process of claim **16** wherein the *syn*-diastereomer is formed in at least about 90% diastereomeric excess.

19. A process for the preparation of (1*S*,2*S*)-1-(4-benzoxy-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1- by catalytic hydrogenation of (2*S*)-1-(4-benzyl-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanone using a catalyst system comprising ruthenium, a (*S*,*S*,*S*,*S*)-2,2'-bis-(diarylphosphino)-1,1'-dicyclopentane ligand, a 1,2-phenylene diamine ligand, and a base.

20. A process for the preparation of (1*S*,2*S*)-1-(4-benzoxy-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1- by catalytic hydrogenation of (2*S*)-1-(4-benzyl-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanone using a catalyst system comprising ruthenium, a (*S*,*S*,*S*,*S*)-2,2'-bis-(diarylphosphino)-1,1'-dicyclopentane ligand, a 2-(alkylthio)aniline ligand, and a base.